

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
17 June 2004 (17.06.2004)

PCT

(10) International Publication Number
WO 2004/050855 A3

(51) International Patent Classification⁷: **A01N 63/00, A61K 45/00, 47/00, C12N 5/00, 5/02, 5/06**

(21) International Application Number:
PCT/US2003/038553

(22) International Filing Date: 4 December 2003 (04.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/430,791 4 December 2002 (04.12.2002) US

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(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:
3 February 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A3 (54) Title: RAPID ONE-STEP METHOD FOR GENERATION OF ANTIGEN LOADED DENDRITIC CELL VACCINE FROM PRECURSORS

WO 2004/050855 (57) Abstract: A one-step method for producing antigen loaded antigen-presenting cells from monocytes ex vivo has been found which comprises contacting the monocytes with a composition comprising an activator such as TNF alpha preferably in combination with at least one growth factor such as GM-CSF and at least one soluble or particulate antigen. According to the methods of the present invention, antigen-loaded dendritic cell vaccines can be generated within as little as three (3) days. In another method of the present invention, antigen loaded antigen-presenting cells are produced from monocytes ex vivo by contacting the monocytes with TNF alpha and granulocyte-macrophage colony stimulating factor at one time point to form antigen-presenting cells and then contacting antigenpresenting cells with soluble or particulate antigenic material at a second time point to form antigen loaded antigen-presenting cells, wherein the antigen loaded antigen-presenting cells are produced in less than four days. The present invention also includes a vaccine which comprises monocyte-derived antigen loaded antigen-presenting cells, wherein the antigenpresenting cells are composed of two or more subsets selected from the group consisting of Langerhans cells with surface markers (CD 1 a+ CD207+); interstitial dendritic cells with surface markers (CD 1a+ CD207-); double negative dendritic cells with surface markers 20 (CD 1 a-CD 14-); and dendritic cells with surface markers (CD 14+ CD 1 a- CD209+).

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/38553

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A01N 63/00; A61K 45/00, 47/00; C12N 5/00, 5/02, 5/06
 US CL : 424/93.71, 278.1; 435/325, 377

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/93.71, 278.1; 435/325, 377

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 WEST, Medline, Caplus, Embase, Biosis, Promt

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| Y | PALUCKA, A.K., et al. Blood dendritic cells: Multi-potential differentiation or committed subsets? Blood. 15 November 1999, Vol. 94, No.10, Suppl. 1, Part 1, page 48A, see entire document. | 1-43 |
| Y | GLUCKMAN, J.C., et al. In vitro generation of human dendritic cells and cell therapy. Cytokines, Cellular and Molecular Therapy. 1997, Vol. 3, pages 187-196, see entire document. | 1-43 |
| Y | CHOI, G.S., et al. Analysis of Methods for the Generation of Dendritic Cells from Human Peripheral Blood Monocytes. Yonsei Med. J. 2000, Vol. 41, No. 5, pages 642-650, see entire document. | 1-43 |
| Y | FEUERSTEIN, B., et al. A method for the production of cryopreserved aliquots of antigen-preloaded, mature dendritic cells ready for clinical use. J. Immunol. Methods. 2000, Vol. 245, pages 15-29, see entire document. | 1-43 |

Further documents are listed in the continuation of Box C.

See patent family annex.

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Date of the actual completion of the international search

28 September 2004 (28.09.2004)

Date of mailing of the international search report

10 NOV 2004

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